



US 20110172394A1

(19) **United States**(12) **Patent Application Publication**
Knight et al.(10) **Pub. No.: US 2011/0172394 A1**(43) **Pub. Date: Jul. 14, 2011**(54) **IMPLANTABLE MATERIAL FOR THE
REPAIR, AUGMENTATION, OR
REPLACEMENT OF BONE AND A METHOD
FOR THE PREPARATION THEREOF**(30) **Foreign Application Priority Data**

Jun. 24, 2008 (GB) 0811542.0

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Oxfordshire (GB)(51) **Int. Cl.**
C07K 14/435 (2006.01)(52) **U.S. Cl.** **530/353**(57) **ABSTRACT**

A method for the preparation of an implantable material for the repair, augmentation or replacement of bone from a fibroin solution, the method comprising the steps of: preparing a gel from the fibroin solution; preparing a material by subjecting the gel to one or more steps of freezing and thawing the gel, wherein the step of preparing the gel from the fibroin solution is performed in the presence of phosphate ions. The material may be treated with calcium ionstoform a fibroin-apatite. A further method comprises the step of treating the material with an isocyanate. The invention also extends to a method for the preparation of an implantable material, wherein a regenerated fibroin solution is used. Also, there is an implantable material and an implant.

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§ 371 (c)(1),

(2), (4) Date: **Mar. 24, 2011**